

CCCGGGCCCCGGCCCGCTCGCGGGACCCCGTGCCCGGCCGCGTCGCCACCGCCGCCCCGGCCGACCGAG  
 GGACCCGCCCCGCGCGGCTGCTCCGGACCTAGAGGATCAAGTCATAATGGGAGCATTTTTAGACAAGCC  
 AAAGATGGAGAAGCATAATGCCCAGGGGCAGGGGAATGGGTACGATACGGCCTAAGCAGCATGCAAGGT  
 TGGCGAGTTGAAATGGAGGACGCACACACGGCTGTGATCGGTTTGCCAAGTGGACTTGAGACATGGTCAT  
 TCTTTGCTGTATATGATGGGCATGCTGGTTCTCAGGTTGCCAAATACTGCTGTGAGCACTTGTTAGATCA  
 CATCACCAATAACCAGGATTTTCAGAGGATCTGCAGGAGCACCTTCTGTGGAGAACGTAAAGAATGGAATC  
 AGAACAGGGTTTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAAGAAACATGGTGACAGATAGAA  
 GCGGGTCAACAGCTGTGGGCGTCTTAATCTCTCCCCAACATACTTATTTTATTAACTGTGGAGACTCGAG  
 AGGTTTACTTTGTAGGAATAGAAAAGTTCACCTTCTTACACAAGACCATAAACCAAGTAACCCGCTGGAA  
 AAAGAACGAATTCAGAATGCAGGGGGCTCGGTGATGATTACAGCGTGTCAATGGCTCTCTGGCTGTATCGA  
 GGGCCCTTGGGGATTTTCGATTACAAATGTGTCCATGGAAAAGGTCCACAGAGCAGCTTGTCTCCCCAGA  
 GCCCGAAGTCCATGATATTGAAAGGTCTGAAGAAGATGACCAGTTCATCATCCTTGCATGCGATGGCATC  
 TGGGACGTCATGGGGAACGAAGAGCTCTGTGACTTTGTGAGATCCAGACTTGAAGTCACTGATGACCTTG  
 AGAAAGTTTGCAATGAAGTAGTCGACACCTGCTTGTATAAGGGAAGTCGAGACAACATGAGTGTGATTTT  
 GATCTGTTTTTCCAAGTGCACCCAAAGTCTCGGCAGAGGCGGTGAAGAAGGAGGCGGAGCTGGACAAGTAC  
 CTGGAGAGCAGAGTAGAAGAAATCATAAAGAAGCAGGTGGAAGGCGTCCCTGACTTAGTCCACGTGATGC  
 GCACGTTAGCCAGTGAGAACATCCCCAGCCTCCCACCAGGGGGTGAATTGGCAAGCAAGCGGAATGTAAT  
 TGAAGCCGTTTACAATAGACTGAACCCTTACAAAAATGACGACACTGATTCTGCGTCAACCGATGATATG  
 TGGTAAAGCCGCTACCCAGCCGTGGACTCACCTTCGCCTGCAAAGGGGAAGCCAGCTCATCCTTGCCGA  
 GCCTTTACCATCCATCACCGACTTCACAGGAGGGTCTGACACGGGTGAGGACTGCAG (SEQ NO:1)

MGAFLDKPKMEKHNAQQQGNGLRYGLSSMQGWRVEMEDAHTAVIGLPSGLETW  
 SFFAVYDGHAGSQVAKYCCEHLLDHITNNQDFRGSAGAPSVENVKNGIRTGFLEID  
 EHMRVMSEKKHGADRSGSTAVGVLI SPQHTYFINC GDSRGLLCRN RKVHFFTQDH  
 KPSNPLEKERIQNAGGSVMIQRVNGSLAVSRALGDFDYKCVHKGKGPTEQLVSPEPE  
 VHDIERSEDDQFIILACDGIWDVMGNEELCDFVRSRLEVTD DLEKVCNEVVD TCL  
 YKGSRDNMSVILICFPSAPKVS AEAVKKEAELDKYLES RVEEIIKKQVEGVPDLVH  
 VMRTLASENIPSLPPGGELASKRNVIEAVYNRLNPYKNDDTDSASTDDMW (SEQ  
 ID NO:2)

FIGURE 1

underlined = deleted in targeting construct

[ ] = sequence flanking Neo insert in targeting construct

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CCCCGGCCCCGGCCCGCTCGCGGGACCCCGTGCCCGGCCCGCTCGCCACCGCCGCCCCG
GCCGACCGAGGGACCCGCCCCCGCGGCTGCTCCGG [ACCTAGAGGATCAAGTCATAATG
GGAGCATTTTTAGACAAGCCAAAGATGGAGAAGCATAATGCCC] AGGGGCAGGGGAATGGG
TTACGATACGGCCTAAGCAGCATGCAAGGTTGGCGAGTTGAAATGGAGGACGCACACACG
GCTGTGATCGGTTTGCCAAGTGGACTTGAGACATGGTCATTCTTTGCTGTATATGATGGG
CATGCTGGTTCTCAGGTTGCCAAATA [CTGCTGTGAGCACTTGTTAGATCACATCACCAAT
AACCAGGATTTTCAGAGGATCTGCAGGAGCACCTTCTGTGGAGAACGTAAAGAATGGAATC
AGAACAGGGTTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAAGAAACATGGT
GCAGATAGAAGCGGTCAACAGCTGTGGGCGTCTTAATCTCTCCCCAACATACTTATTTTC
ATTAAGTGTGGAGACTCGAGAGGTTTACTTTGTAGGAATAGAAAAGTTCACTTCTTCACA
CAAGACCATAAACCAAGTAACCCGCTGGAAAAAGAACGAATTGAGAATGCAGGGGGCTCG
GTGATGATTCAGCGTGTCAATGGCTCTCTGGCTGTATCGAGGGCCCTTGGGGATTTTCGAT
TACAAATGTGTCCATGG] AAAAGGTCCACAGAGCAGCTTGCTCTCCCAGAGCCCGAAGTC
CATGATATTGAAAGGTCCTGAAGAAGATGACCAGTTCATCATCCTTGATGCGATGGCATC
TGGGACGTCATGGGGAACGAAGAGCTCTGTGACTTTGTGAGATCCAGACTTGAAGTCACT
GATGACCTTGAGAAAGTTTGCAATGAAGTAGTCGACACCTGCTTGTATAAGGGAAGTCGA
GACAACATGAGTGTGATTTTGATCTGTTTTCCAAGTGACCCCAAAGTCTCGGCAGAGGCG
GTGAAGAAGGAGGCGGAGCTGGACAAGTACCTGGAGAGCAGAGTAGAAGAAATCATAAAG
AAGCAGGTGGAAGGCGTCCCTGACTTAGTCCACGTGATGCGCACGTTAGCCAGTGAGAAC
ATCCCCAGCCTCCCACCAGGGGTGAATTGGCAAGCAAGCGGAATGTAATTGAAGCCGTT
TACAATAGACTGAACCTTACAAAAATGACGACACTGATTCTGCGTCAACCGATGATATG
TGGTAAAGCCGCTCACCAGCCGTGGACTCACCTTCGCCTGCAAAGGGGAAGCCAGCTCA
TCCTTGCCGAGCCTTTACCATCCATCACCAGCTTCACAGGAGGGTCTGACACGGGTGAGG
ACTGCAG

```

**FIGURE 2A**

## Gene Sequence Structure

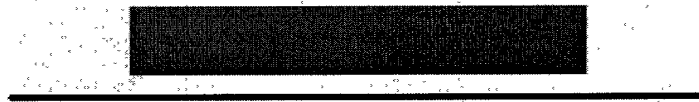
\*

164 bp

Sequence Deleted

326 bp

Size of full-length  
cDNA: 1387 bp



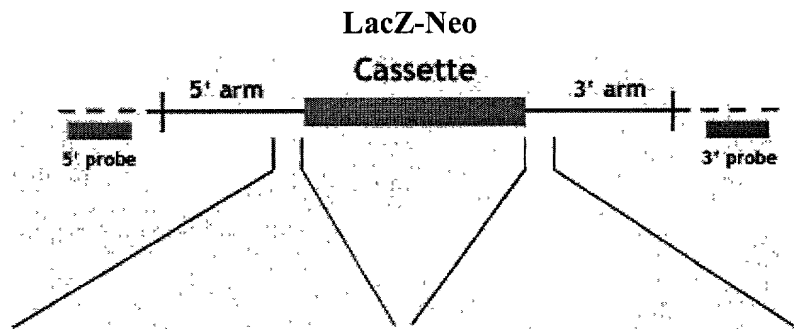
## Targeting Vector\* (genomic sequence)

Construct Number: 2639

Arm Length:

5': 2.5 kb

3': 4 kb



5' >GCAACACAATGCTTGTAGGTA  
TAGCCTGTGAGTTTTTCCAGCTTC  
CTTGTATCTTATAGATTCTGGGTA  
AAGAGTGTGGACATGTTTTGTTT  
CAAAGGCAATCACTTATTTTCTTA  
TTTCTCTTCCTTTACAGACCTAGA  
GGATCAAGTCATAATGGGAGCATT  
TTTAGACAAGCCAAAGATGGAGAA  
GCATAATGCCC<3' (SEQ ID  
NO: 3)

5' >CTGCTGTGAGCACTTGTTAGA  
TCACATCACCAATAACCAGGATTT  
CAGAGGATCTGCAGGAGCACCTTC  
TGTGGAGAACGTAAAGAATGGAAT  
CAGAACAGGGTTTCTGGAGATTGA  
TGAACACATGAGAGTTATGTCAGA  
GAAGAAACATGGTGCAGATAGAAG  
CGGGTCAACAGCTGTGGGCGTCTT  
AATCTCTCCCC<3' (SEQ ID  
NO: 4)

Targeting Vector  
Endogenous Locus

\* Not drawn to scale

FIGURE 2B